

This paper is submitted in response to the Office Action dated July 5, 2000, the first action in this CPA.

In the Office Action, the Examiner rejected claims 8-13 under 35 U.S.C. § 103(a) as being obvious over Yoshida et al '324 in view of newly-cited Lucki et al 421 or Vosburgh '104. The rejection states that Yoshida meets all the claim limitations except for varying pitch, and that it would have been obvious to vary the pitch as taught by Vosburgh (in column 1) to decrease chattering and jumping, or alternatively as taught by Lucki (column 3, lines 60-64) to decrease noise. This rejection is respectfully traversed.

Yoshida Teaches Against Variable Pitch

Yoshida teaches that an uneven tooth pitch creates an uneven depth of cut, because a tooth trailing a larger pitch cuts deeper and therefore is more highly loaded (as the saw blade advances uniformly). "When the pitch is larger," writes Yoshida, "the load is also larger ... This then gives rise to the problem of [uneven] abrasion ... so that a cut deviation is easily produced" (column 3, lines 6-18).

But one of Yoshida's objects is that "all the teeth carry an equal load" (column 3, line 40). Therefore, Yoshida (which the rejection admits does not disclose variable pitch) teaches against varying the pitch.

The Examiner states that reduced noise and chatter would have motivated varying the pitch. However, Yoshida teaches a different approach starting at column 7, line 61. Yoshida emphasizes the role of the angle theta in causing vibration (column 8, lines 1 and 4) and advocates the leading tooth 3 for "suppressed" vibration (column 8, line 10). By teaching a different method of achieving the same object, Yoshida teaches away from the present invention.

Uniform Bending Length Is Not Disclosed

The rejection asserts that Yoshida discloses coaxial bending lines. This is the subject matter of dependent claim 9 (now also incorporated into new claim 15) and independent claim 13 (as a “single baseline”).

The Applicant’s independent claims 8 and 14 recite that

lengths of the first bending line, the second bending line, the third bending line and the fourth bending line are substantially the same.

The rejection relies on Yoshida for this feature, and the Examiner indicated that the drawing is relied on for the disclosure. However, the Applicant respectfully believes that this feature is not disclosed in any of Yoshida’s embodiments as shown in the various figures, because each figure illustrates the main element of Yoshida, that the teeth vary in height. The Examiner is invited to consider:

In Fig. 1, for example, the line F is the “center of the width of the saw blade” and the reference line for the tooth heights (col. 7, lines 4-24). From Fig. 1(b) it appears that the bending line is near the bottoms of the gullets, but the teeth are all of different heights, with the two trailing teeth 5H and 7H (those that have a set) also being different from one another in height (column 7, lines 18-19). The height difference is visible in the drawing, especially with the aid of a straightedge. Because the teeth are of constant pitch but variable height, their “bases” along the asserted one line of bending must differ in length.

The teeth 7, 5, 3 can only have the same bending line length if they differ in shape. But if they do, then instant claim 10 is outside the disclosure of Yoshida and the present rejection does not apply. Claim 8 and its dependent claim 10 cannot simultaneously read on Yoshida.

Therefore, the Applicant respectfully submits that at least one of claim 8 and claim 10 must be allowable.

The same arguments as above apply to the other embodiments. For example, in the embodiment of Fig. 4, where the teeth are ground down (column 4, line 56) and the shapes differ, it is likewise true that either claim 8 or claim 10 is outside the disclosure of Yoshida (assuming there is a single bending line, as the rejection asserts).

The rejection relies on the secondary references only for variable pitch. However, the feature of equal-length bending lines is not disclosed by either of the two new references.

Vosburgh discloses that the teeth are set but discloses nothing at all concerning the bending lines, neither location nor any other characteristic.

Lucki et al implicitly teaches against equal-length bending lines. In the drawing, line 24 is a weld line (col. 2, line 58). Lucki says that the gullet radius c should be equal to about 0.23 times the distance x between the teeth (col. 2, line 42; note that Lucki defines the pitch as the reciprocal of the distance x , see col. 2, line 18). Therefore, the teeth have no well-defined height, the bases of the teeth vary in width, and there can be no implication that bending lines are of uniform length; and there is certainly no explicit teaching of that feature.

No combination of the applied references (not admitted as obvious) could reach the claimed invention.

The New Features

The new feature of claim 14 provides an advantage that, if one tooth breaks, the following tooth will be supported on the bottom of the cut.

The new feature of claims 15-16 makes for a more uniform bending length, and therefore a more uniform set, because the bending line will not likely stray near to the blade.

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As all grounds of objection and rejection have been addressed and overcome, entry of this Amendment and issuance of a Notice of Allowance of claims 8-16, as now presented, are respectfully solicited. Please charge any shortage or credit any overpayment of fees to Deposit Account No. 23-2185 (000004.00634). In the event that a petition for an extension of time is required to be submitted herewith and in the event that a separate petition does not accompany this response, Applicant hereby petitions under 37 CFR 1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized above.

Respectfully Submitted,

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